

THAT WHICH IS CLAIMED:

1. A method of mixing flows with each other in a papermaking process,
5 according to which method a first flow is fed through a tube, and one or more second
flows is/are fed into the first flow via a feed opening which is in connection with the space
limited by said tube, wherein
10 - the first flow is conveyed in the tube to the mixing zone, which mixing zone
comprises on the inner periphery of the tube at least one form part, the control surfaces of
which form part extend a predetermined distance from the inner periphery of the tube
towards the middle of the tube, and which control surfaces together with the inner
periphery of the tube define the inner surface of the tube;
15 - turbulence is generated in the first flow by means of said control surfaces;
and
- the second flow is fed to the mixing zone portion into the first flow through
one or more feed openings positioned on the inner surface of the tube.
2. A method according to claim 1, wherein a second flow is fed through the
feed opening in the form part into the first flow.
20
3. A method according to claim 1 or 2, wherein a fiber suspension is conveyed
through the tube and some papermaking chemical is fed into said fiber suspension via the
feed opening.
- 25 4. A method according to claim 3, wherein the first component of the two-
component retention agent is fed prior to the form parts via the feed opening into the fiber
suspension, which component forms flocs together with the solid matter in the fiber
suspension; said flocs are broken by means of the turbulence generated by the form parts;
and the second component of the retention agent is fed after the form parts, which
30 regathers the flocs.
5. A method according to claim 1 or 2, wherein a first additive component is
fed via a first feed channel, and a second additive component is fed via a second feed

channel; said additive components are mixed with each other prior to the feeding into the mixing zone; and a second flow formed together with said additive components is dosed into the first flow.

5

6. A mixer comprising

- a tube, through which the first flow of the papermaking process is conveyed;
- and
- a feed opening which is in connection with the space limited by the tube and with a feed channel for mixing a second flow into the first flow through the feed opening;

10

wherein

- a mixing zone has been formed in the tube, comprising at least one form part on the inner periphery of the tube;
- the form part comprises control surfaces which extend a predetermined distance from the inner periphery of the tube towards the middle of the tube for generating turbulence in said flow in the mixing zone of the tube;
- the inner periphery of the tube and the control surfaces of the form part define the inner surface of the tube in the mixing zone; and
- the mixer comprises in the mixing zone portion on the inner surface of the tube one or more feed openings which is/are in connection with the feed channel and through which a second flow can be fed into the first flow.

15

7. A mixer according to claim 6, wherein at least one form part comprises at least one feed opening, and the feed opening is in connection with a feed channel outside the tube.

20

25

8. A mixer according to claim 7, wherein the mixer comprises at least two successive form parts, seen in the longitudinal direction of the tube.

30

9. A mixer according to claim 7 or 8, wherein the form part comprises a transverse boring of the tube, the first end of which boring is in connection with the feed channel outside the tube, and the second end is in connection with the space limited by the tube.

10. A mixer according to claim 7 or 8, wherein the form part is hollow, and the feed channel is in connection with the hollow space of the form part, and one or more feed openings has/have been formed on the control surface of the form part.

5 11. A mixer according to claim 7 or 8, wherein the position of the form part relative to the tube is adjustable.

12. A mixer according to claim 7 or 8, wherein the shape of the form part is adjustable.

10 13. Feeding equipment of a head box of a paper machine, comprising
15 - a tube through which a first flow is conveyed to the head box;
 - a feed opening which is in connection with the space limited by the tube and
 with the feed channel for feeding a second flow into the first flow through the feed
 opening; and
20 - a process component, such as a pump or screen, which is arranged in said
 tube before the head box,
 wherein
 - the tube comprises a mixing zone extending from the nearest process
25 component preceding the head box to the head box;
 - the mixing zone comprises at least one form part on the inner periphery of
 the tube;
 - the form part comprises control surfaces extending a predetermined distance
 from the inner periphery of the tube towards the middle of the tube for generating
 turbulence in said flow in the mixing zone of the tube;
 - the inner periphery of the tube and the control surfaces of the form part
 define the inner surface of the tube in the mixing zone, and
 - in the portion of the mixing zone, the inner surface of the tube is provided
 with one or more feed openings, which is/are in connection with the feed channel and
30 through which the second flow can be fed into the first flow.

14. Feeding equipment according to claim 13, wherein at least one form part comprises at least one feed opening, and the feed opening is in connection with the feed channel outside the tube.

5 15. Mixing equipment according to claim 13 or 14; wherein the feeding equipment comprises in the mixing zone before the form parts a feed opening for conveying the first component of a two-component retention agent into the fiber suspension flowing through the tube, and the feeding equipment comprises in the mixing zone a second feed opening for feeding the second component of the retention agent into
10 the flow mixed by the turbulence generated by the form parts.

15 16. Feeding equipment according to claim 13 or 14, wherein the tube is divided after the nearest process component preceding the head box into at least two secondary tubes, along which the first flow is conveyed from said process component to a multilayer head box or to the head boxes of a multiply wire section, and at least one secondary tube comprises at least one form part and at least one feed opening for feeding the second flow into the flow flowing through the secondary tube.